Title (en)

METHOD FOR DISTRIBUTED AND MINIMUM-SUPPORT POINT MATCHING IN TWO OR MORE IMAGES OF 3D SCENE TAKEN WITH VIDEO OR STEREO CAMERA.

Title (de)

VERFAHREN FÜR VERTEILTEN PUNKTABGLEICH MIT MINDESTABSTAND AUF ZWEI ODER MEHR BILDERN EINER MIT EINER VIDEO- ODER STEREOKAMERA AUFGENOMMENEN 3D-SZENE

Title (fr)

PROCÉDÉ DE RECALAGE PAR POINTS DISTRIBUÉS AVEC SUPPORT MINIMUM DANS DEUX OU PLUSIEURS IMAGES D'UNE SCÈNE 3D FILMÉE AVEC UNE CAMÉRA VIDÉO OU STÉRÉO

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Application

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Abstract (en)

[origin: WO2010004417A2] The dense matching of points between a pair of stereo images is required for a number of applications such as augmented reality, security surveillance, navigation, etc. The density of stereo matching depends on the precision of the matching between two images (left and right in case of stereo). This density in turn depends on how precisely individual points are matched with several constraints such as coninuity, epipolar, order, smoothness. This patent discloses a method to automatically compute matchings of point tuples between two images without using previous constraints. The points lie on the specific curve - twisted cubic - that is used to sample two images and establish matchings between those points. Points are grouped by tuples of six or more and described by geometric values invariant to the projection from 3D to the 2D. The chromatic values independent of the illumination complement that description. A combination of algo- rithm steps and data representation allow an optimal and time-efficient implementa¬ tion. The result of such matching can directly be used for dense reconstruction surfaces or augmented reality registration with very high resolution and density.

IPC 8 full level

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